

## CLAIMS

1. Recessed hinge to make a temple (A, A<sup>1</sup>, A<sup>2</sup>, A<sup>3</sup>, A<sup>4</sup>) elastic with respect to a respective endpiece (3, 3<sup>1</sup>, 3<sup>2</sup>, 3<sup>3</sup>, 3<sup>4</sup>) of a frame (F) of a pair of spectacles, said hinge comprising at least a male hinging element (100, 100<sup>1</sup>, 100<sup>2</sup>, 100<sup>3</sup>, 100<sup>4</sup>) pivoted to at least a corresponding female element (200, 200<sup>1</sup>, 200<sup>2</sup>, 200<sup>3</sup>, 200<sup>4</sup>), said male hinging element (100, 100<sup>1</sup>, 100<sup>2</sup>, 100<sup>3</sup>, 100<sup>4</sup>) comprising at least a tie-rod (12, 12<sup>1</sup>, 12<sup>2</sup>, 12<sup>3</sup>, 12<sup>4</sup>) able to slide with respect to said temple (A, A<sup>1</sup>, A<sup>2</sup>, A<sup>3</sup>, A<sup>4</sup>), a bushing (2, 2<sup>2</sup>, 2<sup>3</sup>, 2<sup>4</sup>, 73) arranged inside said temple (A, A<sup>1</sup>, A<sup>2</sup>, A<sup>3</sup>, A<sup>4</sup>) and axially associated with said tie-rod (12, 12<sup>1</sup>, 12<sup>2</sup>, 12<sup>3</sup>, 12<sup>4</sup>), and an elastic means (5, 5<sup>1</sup>, 5<sup>2</sup>, 5<sup>3</sup>, 5<sup>4</sup>) loaded between said bushing (2, 2<sup>2</sup>, 2<sup>3</sup>, 2<sup>4</sup>, 73) and an abutment element (6, 6<sup>1</sup>, 6<sup>2</sup>, 6<sup>3</sup>, 6<sup>4</sup>) attached to said tie-rod (12, 12<sup>1</sup>, 12<sup>2</sup>, 12<sup>3</sup>, 12<sup>4</sup>), characterized in that said female element (200, 200<sup>1</sup>, 200<sup>2</sup>, 200<sup>3</sup>, 200<sup>4</sup>) comprises a seating (30, 30<sup>1</sup>, 30<sup>2</sup>, 30<sup>3</sup>, 30<sup>4</sup>) made in said endpiece (3, 3<sup>1</sup>, 3<sup>2</sup>, 3<sup>3</sup>, 3<sup>4</sup>) by removing material, and in that said male hinging element (100, 100<sup>1</sup>, 100<sup>2</sup>, 100<sup>3</sup>, 100<sup>4</sup>) comprises a hook element (1, 1<sup>1</sup>, 14, 60), solid with said tie-rod (12, 12<sup>1</sup>, 12<sup>2</sup>, 12<sup>3</sup>, 12<sup>4</sup>), housed in said seating (30, 30<sup>1</sup>, 30<sup>2</sup>, 30<sup>3</sup>, 30<sup>4</sup>) and able to articulate on a pin (4, 4<sup>1</sup>, 4<sup>2</sup>, 14) arranged inside said seating (30, 30<sup>1</sup>, 30<sup>2</sup>, 30<sup>3</sup>, 30<sup>4</sup>).
- 25 2. Recessed hinge as in claim 1, characterized in that said male hinging element (100<sup>1</sup>) comprises two tie-rods (12<sup>1</sup>) arranged co-planar and substantially parallel with each other, and able to be pivoted with the relative hook elements (1<sup>1</sup>) inside relative seatings (30<sup>1</sup>).
- 30 3. Recessed hinge as in claim 1, characterized in that said male hinging element (100<sup>2</sup>, 100<sup>4</sup>) comprises two tie-rods (12<sup>2</sup>, 12<sup>4</sup>) arranged co-planar and substantially parallel with each other, and able to be pivoted with the

relative hook elements (14, 60) inside a single common seating (30<sup>2</sup>, 30<sup>4</sup>).

4. Recessed hinge as in claim 2 or 3, characterized in that it comprises a single pin (4<sup>1</sup>, 4<sup>2</sup>, 14) to pivot said tie-rods (12<sup>1</sup>, 12<sup>2</sup>, 12<sup>4</sup>).

5. Recessed hinge as in any claim hereinbefore, characterized in that said seating (30, 30<sup>1</sup>, 30<sup>2</sup>, 30<sup>3</sup>, 30<sup>4</sup>) comprises at least two lateral fins (31, 31<sup>1</sup>) provided with respective through holes (32, 32<sup>1</sup>), with which a central hole (11, 11<sup>1</sup>) is axially aligned, made through transverse to said hook element (1, 1<sup>1</sup>, 14, 60), said through holes (32, 32<sup>1</sup>) being able to allow the insertion of said pin (4, 4<sup>1</sup>, 4<sup>2</sup>, 14) through said fins (31, 31<sup>1</sup>) and said hook element (1, 1<sup>1</sup>, 14, 60).

10 15 6. Recessed hinge as in claim 5, characterized in that at least one of said through holes (32, 32<sup>1</sup>) is threaded in order to allow said pin (4, 4<sup>1</sup>, 4<sup>2</sup>, 14) to be screwed therein.

7. Recessed hinge as in claim 5 or 6, characterized in 20 that said seating (30, 30<sup>1</sup>, 30<sup>2</sup>, 30<sup>3</sup>, 30<sup>4</sup>) comprises at least a curved segment having a radius of curvature (R) centered in said through holes (32, 32<sup>1</sup>), equal to or a little more than a radius of curvature (r) of said hook element (1, 1<sup>1</sup>), centered in said central hole (11, 11<sup>1</sup>).

25 8. Recessed hinge as in claim 7, characterized in that said through holes (32, 32<sup>1</sup>) have a center distant from the leading edge and from the lower edge of said endpiece (3, 3<sup>1</sup>) of a distance substantially equal to said radius of curvature (R).

30 9. Recessed hinge as in any claim hereinbefore, characterized in that said bushing (2, 2<sup>2</sup>, 2<sup>3</sup>, 2<sup>4</sup>) is able to be inserted inside a mating hole (71, 71<sup>2</sup>, 71<sup>3</sup>, 71<sup>4</sup>) made at one end (7, 7<sup>2</sup>, 7<sup>3</sup>, 7<sup>4</sup>) of said temple (A, A<sup>2</sup>, A<sup>3</sup>, A<sup>4</sup>),

and comprises a slightly undulating outer surface (20), a lead-in (21) shaped like a truncated cone, and a through hole (22), able to house said tie-rod (12, 12<sup>2</sup>, 12<sup>3</sup>, 12<sup>4</sup>) with a slight play.

- 5 10. Recessed hinge as in any claim hereinbefore, characterized in that said bushing is made at one end (7<sup>1</sup>) of said temple (A<sup>1</sup>) and comprises a through hole (73) made coaxial and having a reduced diameter with respect to a hole (71<sup>1</sup>).
- 10 11. Recessed hinge as in claim 10, characterized in that said hole (71<sup>1</sup>) is open on one side and is able to be selectively closed by a plate (75).
12. Recessed hinge as in claim 3, characterized in that said two tie-rods (12<sup>2</sup>) are connected to each other inside
- 15 15. said seating (30<sup>2</sup>) by a coil-type connection element (60), arranged around a pin (4<sup>2</sup>).
13. Recessed hinge as in claim 3 or 12, characterized in that only one of said tie-rods (12<sup>2</sup>, 12<sup>4</sup>) is associated with a relative elastic means (5<sup>2</sup>, 5<sup>4</sup>).
- 20 14. Recessed hinge as in claim 1, characterized in that said male hinging element (100<sup>3</sup>) and the female element (200<sup>3</sup>) are arranged and made inside corresponding containing boxes (50, 51) associated respectively with said temple (A<sup>3</sup>) and with the endpiece (3<sup>3</sup>).
- 25 15. Recessed hinge as in claim 3, characterized in that said two tie-rods (12<sup>4</sup>) are connected to each other by a transverse element (14) orthogonal thereto, functioning as a pin, and in that said female element (200<sup>4</sup>) comprises a hook element (40) open at one side and partly drowned
- 30 30. inside said seating (30<sup>4</sup>), and able to cooperate with said transverse element (14) in order to determine the pivoting of said male hinging element (100<sup>4</sup>) and said female element (200<sup>4</sup>).

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16. Recessed hinge as in any claim hereinbefore,  
characterized in that said hook element (1, 1<sup>1</sup>, 14, 60) is  
able to be inserted with play into said seating (30, 30<sup>1</sup>,  
30<sup>2</sup>, 30<sup>3</sup>, 30<sup>4</sup>) in order to allow a pre-determined vertical  
5 movement of the temples (A, A<sup>1</sup>, A<sup>2</sup>, A<sup>3</sup>, A<sup>4</sup>), and also a  
possible pantoscopic adjustment, by means of a prior  
conformation of said endpiece (3, 3<sup>1</sup>, 3<sup>2</sup>, 3<sup>3</sup>, 3<sup>4</sup>).